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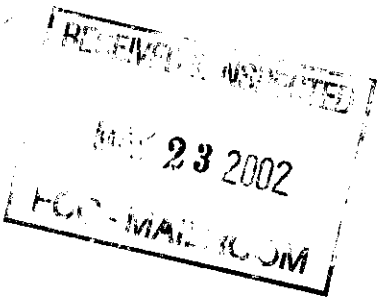
U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave, SW
Washington, DC 20591



APR 2 6 2002

Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Ms. Dortch:

The enclosed document contains Federal Aviation Administration (FAA) comments in the "Matter of Review of Part 87 of the Commission's Rules Concerning the Aviation Radio Service", WT Docket No. 01-289 (FCC 01-303).

The FAA understands that the reply comment period ended on April 15, 2002, therefore, we are requesting a motion to waive that deadline requirement so that the enclosed comments of the FAA are considered.

The rewrite of Part 87 is very important to the FAA. Our office requested comments from several FAA offices and we are now in the process of coordinating their responses on these critical issues. As a result we are requesting a waiver so that we can finalize our response on several important issues. In addition to the requested waiver to the deadline for the enclosed comments, we are advising the Commission that we may have comments on the following issues:

1. Allow certification of radios that operate both inside and outside the civil aviation bands, (i.e., 138-144 MHz, 150.05-150.8 MHz, and 148-149.9 MHz bands).

2. Extend license for non-aircraft stations from 5 to 10 years (the same as for aircraft stations).

3. Additional station class codes. We are unsure of the need for the Ground Communication Outlet, GCO, and are still in review of this code.

4. Allow temporary call signs for A/C under provision of wet lease agreements.

5. Seek comment on how we can better inform all segments of the aviation community that an aircraft operating under the authority of a station license or licensed by rule may only transmit on the frequencies for which the aircraft is eligible.

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6. Seek comment on how to develop a licensing scheme that would no longer require the individual licensing of aircraft stations operating from ultralight aircraft without compromising the safety of life and property.

7. § 87.241 Frequencies, designation of 122.925 MHz for fire fighting.

8. § 87.261 Scope of service. Studying frequency use in Alaska.

9. § 87.263 Frequencies. HF use in Alaska.

10. § 87.305 Frequency coordination.

11. § 87.307 Cooperative use of facilities. Flight test frequencies.

12. 47CFR87.475 (Radiodetermination Service) Frequencies.

13. Subpart N Emergency Communications.

14. Subpart O Airport Control Tower Stations.

If you should have any questions regarding this waiver request, please contact Mr. Robert Frazier, Spectrum Planning and International Division, ASR-200, at (202) 267-9722.

Sincerely,

George K. Sakai
Program Director for Spectrum
Policy and Management, ASR-1

Enclosure

cc:
Jeff Tobias, Rm 2-C828
Scott Stone, Rm 4-C337
Ghassan Khelek, Rm 3-A260
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of Part 87 of the Commission's Rules	)	WT Docket No. 01-289
Concerning the Aviation Radio Service	)	

NOTICE OF PROPOSED RULE MAKING

Comments of the Federal Aviation Administration

The following comments of the Federal Aviation Administration are organized to match the organization of the NPRM. First we address the specific questions in parts A through N and then propose additional changes to the Proposed Rules.

A. Update AMS(R)S. You asked whether to authorize AMS(R)S under Part 87 in the 1610-1626.5 MHz band and 5000-5150 MHz band, instead of Part 25, without priority and real time preemption. While the FAA supports new AMS(R)S allocations under Pt 87, but priority and real time preemption must be provided unless the allocation is exclusively AMS(R)S.

D You raised the following equipment Certification Issues.

- Permit certification of dual channel spacing receivers: 8.33 and 25 kHz spacing. The FAA supports 8.33 kHz channel spacing for transoceanic aircraft only, with no transmission allowed in U.S.
- Add emission designators 8K33A3E to the A3E emission class, listing 8.33 kHz as the authorized BW for the new emission designator. FAA agrees.
- create a new footnote to the table denoting that the use of 8.33 kHz bandwidth is only for aircraft in international flight. FAA supports, but only outside U.S. controlled airspace.
- Ask for comment on whether we should amend our rules to accommodate TDMA emissions in the VHF AM(R)S band. FAA supports this proposal, for VDL Mode 2 and 3 only.
- Ask whether 121.975 MHz to 122.675 MHz should be allowed for ATC on a secondary basis (currently allocated to FSSs). FAA supports.
- Ask whether to remove the restriction limiting the use of 121.6 to 121.95 MHz to ground control, and to allow these frequencies to be used for general ATC communications. The FAA supports the removal of this restriction, as it will enhance the ability of the FAA to find frequencies for new requirements.
- Require applicants to submit, as part of the application for certification, an FAA determination of equipment's compatibility with the NAS, rather than having applications remain in pending status for a specified of time (21 days now) to allow for FAA objection. FAA supports this proposal as it will close a loophole without increasing workload.

G To accommodate the new HFDL, add emission type J2D for enroute HF. FAA supports.

H Eliminate reference to CAP. FAA supports.

The Commission requested comment on general question of whether station class codes should be eliminated from Part 87, and utilize them solely as part of the application process.
FAA Comment: Station Classes are an integral part of the Government Master File records and cannot totally be eliminated for ground stations. If the FCC provides the type of service on proposals for ground equipment (AWOS, Ground, Clearance, etc.) the FAA can add the appropriate station class to the NTIA record. As for aircraft station classes, the FAA has no comment.

J Authorize DGPS in 108-118 MHz, 1559-1610 MHz bands, clarify footnote to the Commission's freq allocation table, and begin to license DGPS on a non-developmental basis. FAA supports this proposal.

K Aeronautical Advisory Stations (Unicom) Issues. In order to reduce congestion on the 3 frequencies designated as MA (all aircraft), because airports are reluctant to use the MA2 class (private aircraft only), propose to eliminate the distinction between MA and MA2. FAA has no position, but notes that if this change is made, amendment to US 31 will be required.

Amend rules to require applicants for a Unicom license to request a specific frequency rather than to assign a freq based on the max geographic co-channel separation. FAA opposes, because frequency engineering is needed to provide better Unicom separation.

Use competitive bidding, rather than a hearing, to chose a licensee when there are competing applications for a specific site. FAA supports the hearing process (thus objects to competitive bidding) because we cannot agree that competitive bidding is the proper criteria for determining the licensee of a safety of life service.

Propose to adopt a licensing scheme that avoids mutually exclusive Unicom applications, at least where government entities are involved. FAA proposes to change the rule to allow government license to remain as well as the non-Fed license. The rationale is because the government operation may provide additional services, such as longer hours of operation, etc. This would be lost when government license is terminated when non-Fed operation begins.

Possible methods for licensing: first come, first served, government entities have priority, airport owner has priority, renewal expectancy. The FAA position is that proper frequency management should be applied to determine that the new license is compatible with other Unicom operations.

L South San Diego Uncontrolled Airspace Corridor Group. Authorized 121.95 MHz for parachute jumping under an STA. Propose to codify the freq 121.95 MHz for A/G and A/A comm. For A/C up to 13kft, to avoid the need to reapply for STA. FAA supports.

N Additional Rules.

Codify the use of 1090 MHz by TCAS (done now through waivers). FAA supports.

Request comment on whether there are any other rules which need modification or elimination.
FAA has included needed rules in the Proposed Rules portion of this response.
FAA proposed new rules to support the Universal Access Transceiver (UAT)

Universal Access Transceiver (UAT)

The FAA proposes adding new rules to Parts 2 and 87 that will create a new type of datalink for use in Automated Dependent Surveillance – Broadcast (ADS-B) service. The Universal Access Transceiver (UAT) is a datalink technology that has been developed to provide Automatic Dependent Surveillance – Broadcast service (and other services) to the Aviation community. The UAT technology has been field-tested in the FAA Alaska Region over the last two years, using approximately 150 airborne and ground stations. In addition, several sites within the Continental U.S. have hosted UAT trials. These include the FAA Technical Center in Atlantic City, NJ, NASA's Runway Incursion Prevention System test bed at Langley, VA, and the Dallas-Ft. Worth airport. In December of 2000, the RTCA created Working Group 5 of Special Committee 186, to develop and approve the Minimum Operational Performance Standards for the UAT datalink. This effort is scheduled to be complete in June of 2002. As part of this effort, the NTIA has granted Stage 3 spectrum certification for use of the UAT datalink using a radio frequency of 978 MHz.

The UAT datalink signaling characteristics are summarized below:
Frequency: 978 MHz
Modulation: Continuous-phase FM, Binary FSK
FM Modulation Index: 0.6
Data Rate: 1.041667 Megabits per second.
Occupied bandwidth (99% power, measured in 100 kHz BW): 1.3 MHz
Transmitter duty cycle: Airborne units transmit one message of at most 420 microseconds duration each second. Ground units transmit messages of 4,274 microseconds duration multiple times per second, using same emission type as airborne units.
Transmitter Power: Depends on equipment classification.

Detailed changes proposed by the FAA to accommodate UAT are included in the Proposed Rules as appropriate.

FAA supports the AMS(R)S service in the bands 1610-1626.5 MHz and 5000-5150 MHz as long as it is provided with priority and preemption over all other satellite communications in the band. If more than one service provider shares the same AMS(R)S spectrum, inter-network priority and preemption will be required. Furthermore, in the 5000-5010 MHz band, any AMS(R)S technical characteristics, including spurious emission, must be designed to give full protection to MLS in the band 5030-5150 MHz.

VDL Mode 3. Provisions need to be made to accommodate the VDL Mode 3 station class, emission class (G7D), emission mask, and frequency tolerance.

The FAA conditions for support of the inclusion of 8.33 kHz channel spacing are given below:

In the band 117.975-137 MHz, for transmitters type accepted to tune to 8.33 kHz channel spacing as well as 25 kHz channel spacing, the authorized bandwidth is 8.33 kHz when tuned to an 8.33 kHz channel.

In the band 117.975-137 MHz, the Commission will not authorize any 8.33 kHz channel spaced transmissions, or the use of their associated emission designator within the U.S. NAS., except by avionics communications equipment manufacturers and Flight Test Stations, which are required to perform installation and checkout of such radio systems prior to delivery to their customers for use outside U.S. controlled airspace..

The FAA supports the inclusion of the changes to the VDL emission mask for G1D and G7D emissions, which was adopted on December 21, 2001 (FCC 01-378, WT Docket No; 00-77. Those changes are not reflected in the section 87.139 (k) which can be found on the web page, which is linked, to the FCC web site, as of March 21, 2001. We assume that this is merely a delay in updating the web site, but feel strongly that these changes be included as soon as possible.

Restructure of Equipment Certification Process.

FAA supports the FCC proposed restructuring of the equipment certification process for equipment for use in any of the frequency bands identified in 87.147. The new process will ensure that each such application will be reviewed by the FAA. The current practice, where the FCC and FAA are sent an application simultaneously has the drawback that if for some reason an application does not reach the FAA office, then the FAA will not be aware of the application at all. Since the FAA is to review each application in the subject frequency bands even under the current process, there should be no additional delay in processing and no additional burden to the FAA. Even with the current process, which grants the FAA 21 days to review, if during that time period the FAA cannot complete its review, it has requested, and been granted, an extension by the Commission.

APPENDIX A: PROPOSED RULES

Parts 2 and 87 of title 47 of the Code of Federal Regulations are proposed to be amended as follows:

PART 2 -- FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation for Part 2 continues to read as follows:

AUTHORITY: 47 U.S.C. 154, 302a, 303, and 336, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations, is amended as follows:

a. Revise pages 26 and 44.

b. In the list of United States (US) Footnotes, add footnote US343.

§ 2.106 Table of Frequency Allocations.

The FAA proposed revisions and additions read as follows:

47CFR2.201: Emissions
Commentary:
The UAT emissions type is F1D (FM modulated, one digital channel). The emissions type can be derived using the following formula:
Bn = 2(B + 1)Fm, with B = 0.6 (the modulation index) and Fm = 520 KHz.
Bn = 1.66 MHz,
This gives a full emissions designator of 1M70F1D

47CFR2.303 Station identification
Station ID for UAT Uplink is provided by geographic position provided in the transmitted message content. Geographic position data or flight ID or call sign provides station ID for airborne stations.

* * * * *

* * * * *

UNITED STATES (US) FOOTNOTES

* * * * *

US343 Differential-Global-Positioning-System (DGPS) Stations may be authorized on a primary basis in the bands 108-117.975 MHz and 1559-1610 MHz for the specific purpose of transmitting DGPS information intended for aircraft navigation.

* * * * *

Global change: Replace "Spectrum Engineering Division" with "Office of Spectrum Policy and Management, ASR-1"

Need to insure that changes made to Parts 2 and 87 by R&O WT Docket No. 00-77, 16 FCC 8228 (2001), and by MO&P, WT Docket No. 00-77, adopted December 21, 2001 as a result of a Petition for Partial Reconsideration filed by Aeronautical Radio Inc, on June 14, 2001 are included. These include rules governing FIS, VDL, emission limits, etc.

PART 87—AVIATION SERVICES

1. The authority citation for Part 87 continues to read as follows:

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303, 307(e) unless otherwise noted. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-156, 301-609.

2. Section 87.27 is amended to read as follows:

§ 87.1 General Information
add the following to the list of documents:
(4) The Federal Aviation Act of 1958.

§ 87.5
Automatic Dependent Surveillance-Broadcast. (ADS-B), A one-way transmission from an aircraft that identifies the aircraft position, based on information from onboard sensors such as the Global Positioning System.*Flight Information Service. (FIS).* –Broadcast (-B) *Flight information service-Broadcast (FIS-B).* A broadcast service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.
Automatic terminal information service (ATIS-Broadcast (B). The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof.
Local Area Augmentation System (LAAS). A system which broadcasts corrections to the GPS position in support of precision GPS approach and landings.
Aircraft Operation Control (AOC). Communications between ground and aircraft concerning operation of the aircraft. AOC is considered a safety of life communication.
GBAS. Ground Based Augmentation System. This is the ICAO international system which transmits GPS corrections from a ground based transmitter on a frequency in the 108-118 MHz frequency band.
LAAS. The Local Area Augmentation System. The U.S. FAA version of the ICAO standard GBAS system.
DGPS. Differential GPS. A system which transmits corrections to the GPS derived position.

§ 87.27 License term.

(a) Licenses for stations in the aviation services will normally be issued for a term of ten years from the date of original issuance, or renewal.

(b) Licenses for developmental stations will be issued for a period not to exceed one year and are subject to change or to cancellation by the Commission at any time, upon reasonable notice, but without a hearing.

3. Section 87.45 is amended to read as follows:

§ 87.37 Developmental License.
add the highlighted text:
(c) *Assignable frequencies.* Developmental stations may be authorized to use frequencies available for the service and class of station proposed. The number of frequencies assigned will depend upon the specific requirements of the developmental program and the number of frequencies available. FAA: add the following: Assignment of frequencies for system development does not imply that spectrum will be available for operational implementation of the system.

§ 87.41 Frequencies.
The applicant must propose frequencies to be used by the station consistent with the applicant's eligibility, FAA: Add the following: conformance to the allocation tables, the proposed operation and the frequencies available for assignment.

§ 87.45 Time in which station is placed in operation.

This section applies only to unicom stations and radionavigation land stations, excluding radionavigation land test stations. When a new license has been issued or additional operating frequencies have been authorized, the station or frequencies must be placed in operation no later than one year from the date of the grant. The licensee must notify the Commission in accordance with § 1.946 of this chapter that the station or frequencies have been placed in operation.
4.
§ 87.51 Aircraft earth station commissioning.
In order to protect the GNSS frequencies L1 and future L5, add the following text:
(c) Aircraft earth stations must suppress unwanted emissions, arising from the signal generation process, amplification, intermodulation, and/or antenna effects in the frequency bands 1164-1188 MHz and 1559-1610 MHz to a level which does not cause interference to on-board systems of the Global Navigation Satellite System, namely the Global Positioning System and the Russian Federation Global Navigation Satellite System (GLONASS).

5. Section 87.107 is amended by adding paragraph (a)(6) to read as follows:

§ 87.69 Maintenance tests.

The licensee may make routine maintenance tests on equipment other than emergency locator transmitters if there is no interference with the communications of any other station. FAA: add the following: These stations are listed in subpart Q. Procedures for conducting tests on emergency locator transmitters are contained in subpart F.

§ 87.91 Operation of transmitter controls

FA: make the following deletion: ~~der of a marine radio operator permit or a restricted radiotelephone operator permit must perform only transmitter operations which are controlled by external switches. These operators must not perform any internal adjustment of transmitter frequency determining elements. Further, the stability of the transmitter frequencies at a station operated by these operators must be maintained by the transmitter itself~~. When using an aircraft radio station on maritime mobile service frequencies the carrier power of the transmitter must not exceed 250 watts (emission A3E) or 1000 watts (emission R3E, H3E, or J3E).

§ 87.107 Station Identification.

* * * * *

(a) * * * * *

(6) Aircraft operating under Wet Lease Agreements as provided in 14 C.F.R. Part 119 may identify themselves by lessee carrier's call sign, followed by the suffix "WLA."

6. Section 87.109 is amended to read as follows:

§ 87.109 Station Logs.

(a) A station at a fixed location in the international aeronautical mobile service must maintain a log in accordance with Annex 10 of the ICAO Convention.

(b) A station log must contain the following information.

(1) The name of the agency operating the station.

(2) The identification of the station.

(3) The date.

(4) The time of opening and closing the station.

(5) The frequencies being guarded and the type of watch (continuous or scheduled) being maintained on each frequency.

(6) Except at intermediate mechanical relay stations where the provisions of this paragraph need not be complied with, a record of each communication showing text of communication, time communications completed, station(s) communicated with, and frequency used.

(7) All distress communications and action thereon.

(8) A brief description of communications conditions and difficulties, including harmful interference. Such entries should include, whenever practicable, the time at which interference was experienced, the character, radio frequency and identification of the interfering signal.

(9) A brief description of interruption to communications due to equipment failure or other troubles, giving the duration of the interruption and action taken.

(10) Such additional information as may be considered by the operator to be of value as part of the record of the stations operations.

(c) Stations maintaining written logs must also enter the signature of each operator, with the time the operator assumes and relinquishes a watch.

7. Section 87.131 is amended by revising the table to read as follows:

§ 87.111 Suspension or discontinuance of operation.

The FAA regional office ~~center~~ must be notified again when service resumes.

§ 87.131 Power and emissions.

Class of station	Frequency band/frequency	Authorized emission(s)[9]	Maximum power[1]
* * *	* * *	* * *	* * *
Aeronautical enroute and aeronautical fixed.	HF.....	R3E, H3E, J3E, J7B, H2B, J2D	6 kW.
* * *	* * *	* * *	* * *
Aircraft Earth.	UHF.....	G1D, G1E, G1W	80 W.[8]
* * * * *	* * * * *	* * * * *	* * *

[8]Power may not exceed 80 watts per carrier as measured at the output of the high power amplifier. The maximum EIRP may not exceed 2000 watts per carrier.

* * * * *

§ 87.133 Frequency stability
FAA: make the following changes:
Delete column 1 and footnote 1. Delete footnote 2 reference in column 2 heading and delete footnote 2. Delete reference to footnote 3, and delete footnote 3: reason: the value footnoted is the only one in the table which applies after 1990 for the services where the footnote is referenced. Delete footnotes 4 and 5 , since they applie only to column 1 entries and column 1 is to be deleted.

8. Section 87.137 is revised by amending the table in paragraph (a) to read as follows:

§ 87.137 Types of Emission.

(a)* * *

Class of emission	Emission designator	Authorized bandwidth (kilohertz)		
		Below 50 MHz	Above 50 MHz	Frequency deviation
* * *	* * *	* * *	* * *	
A3E	8K33A3E		(17)	
* * *	* * *	* * *	* * *	
F9D	5M0F9D		(9)	
G1D	16K0G1D		20kHz	
* * *	* * *	* * *	* * *	
G1E[16]	21K0G1E		25	
F1D[xx] *(UAT)*	1M70F1D		1800 kHz	312.5 kHz
G1W[16]	21K0G1W		25	
* * * * *	* * * * *	* * * * *	* * * * *	

* * * * *

[9]To be specified on license.

* * * * *

[16]Authorized for use by aircraft earth stations. Lower values of necessary and authorized bandwidth are permitted.

[xx] Authorized only for UAT service at 978 MHz

[17]Only authorized for use by aircraft in international flight or for equipment certification purposes.

* * * * *

§ 87.137. types of emissions

Make the following change to types of emission.

A2A	2K04A2A	274	50
~~A2D~~	6K0A2A. ~~6K0A2D~~		50
A2D[5]	13K0A2D		50

9. Section 87.139 is revised by removing paragraph 87.139(i)(2), redesignating paragraphs 87.139(i)(3) and paragraph 87.139(i)(4) as paragraphs 87.139(i)(2) and paragraph 87.139(i)(3) respectively and amending paragraphs 87.139(i)(1) and paragraph 87.139(i)(3) to read as follows:

§ 87.139 Emission limitations.

Add new entry: 1164-1188 MHz, with Attenuation of 155 dB/1 MHz

* * * * *

(i) * * * * *

(1) * * *

Frequency (MHz)	Attenuation (dB)[1]
0.01 to 1525	135 dB/4 kHz
1525 to 1559	203 dB/4 kHz
1559 to 1585	155 dB/1 MHz
1585 to 1605	143 dB/1 MHz
1605 to 1610	117 dB/1 MHz
1610 to 1610.6	95 dB/MHz
1610.6 to 1613.8	80 dBW/MHz
1613.8 to 1614	95 dB/MHz
1614 to 1626.5	70 dB/4 kHz
1626.5 to 1660	70 dB/4 kHz[2]
1660 to 1670	49.5 dB/20 kHz[2]
1670 to 1735	60 dB/4 kHz
1735 to 12000	105 dB/4 kHz
12000 to 18000	70 dB/4 kHz

[1]These values are expressed in dB below the carrier referenced to the bandwidth indicated, and relative to the maximum emission envelope level, or where the attenuation is shown in dBW, the attenuation is expressed in terms of absolute power referenced to the bandwidth indicated.

[2]Attenuation measured within the transmit band excludes the band ± 35 kHz of the carrier frequency.

* * * * *

(3) * * *

Frequency Offset (normalized to SR)	Attenuation (dB)
+/-0.75 x SR	0
+/-1.40 x SR	20
+/-2.95 x SR	40

Where: SR = Symbol Rate
SR = 1 x channel rate for BPSK
SR= 0.5 x channel rate for QPSK

* * * * *

§ 87.139. Emission limitations.

In subparagraph (h)(2): replace "any" with" "by"

Add new 87.139 (i)(1) For UAT transmitters, the average emissions measured in a 100 kHz bandwidth must be attenuated below the maximum emission level by at least:

Frequency Offset (MHz)	Atenuation (dB)
+/- .0.5	0
+/- 1.0	18
+/- 2.25	50
+/- 3.25	60

The mask shall be defined by drawing straight lines through the above points on log semi-paper.

Add new section (i)(2): UAT transmitters with an output power of 5 Watts or more, must limit their emissions by at least 43 + 10 log (P) dB on any frequency removed from the assigned frequency by more than 250% of the occupied bandwidth. Occupied bandwidth is defined as 99% of the signal power measured with a bandwidth of 100 kHz. P in the above equation is the average transmitter power measured in Watts.

Add new section (i) (3): UAT transmitters with less than 5 Watts of output power, must limit their emissions by at least 40 dB relative to the carrier peak on any frequency removed from the assigned frequency by more than 250% of the occupied bandwidth. Occupied bandwidth is defined as 99% of the signal power measured with a bandwidth of 100 kHz.

§ 87.141. Modulation requirements.

Add new section (k): UAT transmitters must use F1D modulation without phase discontinuities.

DW question: In subparagraph (g), is the Airworthiness Office the correct office? TBD

§ 87.145. Acceptability of transmitters for licensing.

Delete the first occurrence of this section and all its paragraphs, and keep the second occurrence since it contains one additional paragraph.

10. Section 87.147 is amended by adding paragraph (f) and revising paragraph (d) to read as follows:

§ 87.147 Authorization of equipment.

* * * * *

(d) An applicant for certification of equipment intended for transmission in any of the frequency bands listed in paragraph (d)(3) of this section must notify the FAA of the filing of a certification application. The letter of notification must be mailed to: FAA, Office of Spectrum Policy and Management, 800 Independence Ave., S.W., Washington, D.C. 20591 prior to the filing of the application with the Commission.

* * *

(2) The certification application must include a copy of the notification letter to the FAA as well as a copy of the FAA's subsequent determination of the equipment's compatibility with the National Airspace System.

* * * * *

(f) Certification may be requested for equipment that has the capability to transmit in the 138-144 MHz, 148-149.9 MHz, or 150.5-150.8 MHz bands as well as frequency bands set forth in Section 87.173 of this part. The Commission will only certify this equipment for use in the bands regulated by this part.

§ 87.147 Authorization of equipment.

There are two sections entitled "§ 87.147 Authorization of equipment".. They are mostly redundant. The recommendation is to keep the first occurrence and add any missing text from the second occurrence.

In the first occurrence of this section, in subparagraph (d)(3), make the following additions:

90kHz-110kHz
190kHz-285kHz
325kHz-435kHz
74.800 MHz to 75.200 MHz
108.000 MHz to 137.000 MHz
328.600 MHz to 335.400 MHz
960.000 MHz to 1215.000 MHz
1545 MHz to 1559 MHz
1559.000 to 1626.500 MHz
1646.500 MHz to 1660.500 MHz
5000.000 MHz to 5250.000 MHz
14.000 GHz to 14.400 GHz

15.400 GHz to 15.700 GHz
24.250 GHz to 25.250 GHz
31.800 GHz to 33.400 GHz

In subparagraph (d) replace "Spectrum Engineering Division" with Office of Spectrum Policy and Management, ASR-1"

§ 87.149 Special equirements for automatic link establishment.

11. Section 87.171 is amended by adding, in alphabetical order, the symbols and class of station for RLP to read as follows:

47CFR87.163 (Aeronautical Enroute Stations) Frequencies
Add new section (g) The frequency 978.0 MHz is authorized for UAT transmission of ADS-B, TIS-B, FIS-B and other future uses per the applicable RTCA documents.

§ 87.171Class of station symbols. FCC is asking if station classes should be totally eliminated? FAA supports elimination of station class codes. If not eliminated, then add suitable codes for UAT stations (ground, airborne, vehicular).

§ 87.171 Class of station symbols.

* * *

GCO – Ground Communication Outlet
* * *
RCO – Remote Communications Outlet
* * * *
RLD – RADAR/TEST
* * *
RNV – Radio Navigation Land/DME
* * *
RPC – Ramp Control
*****

12. Section 87.173 is amended by revising the table paragraph (b) to read as follows:

§ 87.173 Frequencies.
If we support the deletion of station classes, then we will only have to deal with it when an application is made.

FAA: Delete all distinct frequency listings from the table that fall within the HF AM(R)S frequency bands, and replace with the bands: 2850-3025 kHz; 3400-

3500kHz; 4650-4700kHz; 5450-5680kHz; 6525-6685kHz; 8815-8965kHz; 10005-10100kHz; 11275-11400kHz; 13260-13360kHz; 17900-17970kHz; and 21924-22000 kHz. Furthermore delete section 87.263 (d). Replace with note that frequencies in these bands are to be used in accordance with Appendix 27 to the the ITU Radio Regulations.

FAA: Make the following changes.

90–110 kHz	Q	RL	LORAN"C".
190–285 kHz	Q	ALB ~~RLB~~	Radiobeacons.
200–285 kHz	S ~~O~~	FAR ~~FAC~~	AUTOMATIC WEATHER OBSERVATION STATION ~~Air traffic control~~.
325–415 ~~405~~ kHz	S ~~O~~	FAR ~~FAC~~	AUTOMATIC WEATHER OBSERVATION STATION ~~Air traffic control~~
325–435 kHz	Q	ALB ~~RLB~~	Radiobeacons.
~~510.525~~ 510 -- 525	Q	RLB	Radiobeacons
72.020–~~75.980~~ 74.6 MHz	P	A, AXO	Operational fixed; 20 kHz spacing.
~~75.000~~ 74.8 – 75.2 MHz	Q	ALA ~~RLA~~	Marker beacon.
108.000 MHz	Q	ALTO ~~RLT~~	
108.000–117.950 MHz	Q	ALO ~~RLO~~	VHF omni-range.
108.050 MHz	Q	ALTO ~~RLT~~	
108.100–111.950 MHz	Q	ALL ~~RLL~~	ILS localizer.
108.100 MHz	Q	ALTO ~~RLT~~	
108.150 MHz	Q	ALTO ~~RLT~~	
328.600–335.400 MHz	Q	ALQ ~~RLG~~	ILS glide path.
334.550 MHz	Q	ALTO ~~RLT~~	
334.700 MHz	Q	ALTO ~~RLT~~	

Emergency and distress.			
960–1215 MHz	~~F~~, Q	AL ~~MA, RL~~	Electronic aids to air navigation.
978.000 MHz	F, I, Q L, M, N	ALTO ~~RLT~~ (need class for UAT)	
979.000 MHz	Q	ALTO ~~RLT~~	
1030.000 MHz	Q	RN ~~RLT~~	
1090.000 MHz	Q	ALTO	
1104.000 MHz	Q	ALTO ~~RLT~~	
979.000 MHz	Q	ALTO ~~RLT~~	
1240-1370~~1300–1350 MHz~~	F, Q	ALS ~~MA, RLS~~	Surveillance radars and transponders.
2700-2900 MHz	Q	ALS ~~RLS~~	Airport surveillance and weather radar
4200–4400 MHz	F	MA	Radio altimeters.
5000–5250 MHz	Q	ALL, ALG, AL ~~MA, RLW~~	Microwave landing system
5031.000 MHz	Q	ALTO ~~RLT~~	
5350–5470 MHz	F	MA	Airborne radars and

§ 87.173 Frequencies.

* * * * *

(b) Frequency table:

Frequency or frequency band	Subpart	Class of station	Remarks
* * *	* * *	* * *	* * *
510-535 kHz	Q	RLB	Radiobeacons.
* * *	* * *	* * *	* * *
108.000-117.950 MHz.....	Q	RLO	VHF omni-range
108.000-117.975 MHz.....	Q	DGP	Differential GPS
108.050 MHz.....	Q	RLT	
* * *	* * *	* * *	* * * * *
1435-1535 MHz.....	F, J	MA, FAT	Aeronautical telemetry and telecommand operations.
1559-1610 MHz.....	Q	DGP	Differential GPS
1559-1626.5 MHz.....	F,Q	MA, RL	Aeronautical radionavigation
* * * * *	* * * * *	* * * * *	* * * * *

Section 87.187 is amended by adding a new paragraph (dd) to read as follows:

§ 87.187 Frequencies

§ 87.187 Frequencies.

* * * * *

(dd) The frequency 121.95 is authorized for air-to-ground and air-to-air communications for aircraft up to 13000 feet above mean sea level (AMSL) within the area bounded by the following coordinates (all coordinates are referenced to North American Datum 1983 (NAD83)): The frequency 978 MHz is authorized for transmission of ADS-B, TIS-B, FIS-B and other future uses per the applicable RTCA documents.

32-35-00 N. Lat.; 117-12-00 W. Long.

32-42-00 N. Lat.; 116-56-00 W. Long.

32-41-00 N. Lat.; 116-41-00 W. Long.

32-35-00 N. Lat.; 116-38-00 W. Long.

32-31-00 N. Lat.; 117-11-00 W. Long.

~~14.~~Section 87.189 is amended by revising paragraphs (c) to read as follows:

§ 87.189 Requirements for public correspondence equipment and operations.

* * * * *

(c) A continuous watch must be maintained on the frequencies used for safety and regularity of flight while public correspondence communications are being handled. For aircraft earth stations, this requirement is satisfied by compliance with the priority and preemptive access requirements of § 87.187(q).

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Subpart G, Aeronautical Advisory Stations (Unicoms)
§ 87.213 Scope of service.

~~15.~~13.Section 87.217 is amended by revising paragraph (a) to read as follows:

§ 87.217 Frequencies.

(a) Only one unicom frequency will be assigned at any one airport. Applicants must request a particular frequency, which will be taken into consideration when the assignment is made. The frequencies assignable to unicoms are:

* * * * *

§ 87.241 Frequencies

§ 87.261 Scope of service

§ 87.263 Frequencies

§ 87.305 Frequencie coordination

§ 87.307 Cooperative use of facilities

§ 87.323 Frequencies
Subparagraph (b), second sentence, replace "FAA Regional Spectrum Management Office" with "FAA Regional Frequency Management Office"

§ 87.345 Scope of service
47CFR87.345 (Aeronautical Utility Mobile Stations) Scope of service
Add new section (f) Transmissions by aeronautical utility mobile stations for UAT service are authorized.

47CFR87. 349 (Aeronautical Utility Mobile Stations) Frequencies
Add new section (e) The frequency 978.0 MHz is authorized for UAT transmission of ADS-B.

47CFR87. 375 (Aeronautical Search and Rescue Stations) Frequencies
Add new section (e) The frequency 978.0 MHz is authorized for UAT transmission of ADS-B.

47CFR417 (Airport Control Tower Stations)
Add here the same provisions as for Aeronautical Enroute Stations above

(47CFR87.163).
47CFR87.471 (Radiodetermination Service) Scope of service
Modify section (a) to allow Uplink of FIS-B products.

47CFR87.475 (Radiodetermination Service) Frequencies.
Add new section (b) (9) 978.0 MHz is authorized for UAT service.
Modify section (c) (1) to add reference to 87.187(dd) allowing use of UAT for radionavigation land test stations. Modify section (c) (2) to all 978.0 to list of available frequencies for testing airborne UAT receiving equipment.

Subpart N Emergency Communications

Subpart O Airport Control Tower Stations.

§ 87.421 Frequencies.

Make the following deletion:

~~(b) Frequencies in the bands 200.0–285.0 and 325.0–405.0 kHz will only be assigned to control towers and RCOs authorized to operate on at least one VHF frequency, unless a~~

~~showing hasbeen made that elimination of VHF service will not adversely affect life and property in the air.~~

Subpart P Operational Fixed Stations

~~16.~~14. Section 87.475 is amended by revising paragraphs (b)(2) and (c)(2) to read as follows:

§ 87.475 Frequencies.

(c) (2) The frequencies available for assignment to radionavigation land test stations for the testing of airborne receiving equipment are 108.000 and 108.050 MHz for VHF omni-range; 108.100 and 108.150 MHz for localizer; 334.550 and 334.700 MHz for glide slope; 978 and 979 MHz (X channel)/1104 MHz (Y chan-nel) for DME; 1030 MHz for ATC radar beacon transponders; 1090 MHz for TCAS ramp testers; 978 MHz for UAT ramp testers, and 5031.0 MHz for microwave landing systems. Additionally, the frequencies in paragraph (b) of this section may be assigned to radionavigation land test stations after coordination with the FAA. The following conditions apply:

§ 87.475 Frequencies.

* * * * *

(b) * * * * *

(2) Radiobeacon stations enable an aircraft station to determine bearing or direction in relation to the radiobeacon station. Radiobeacons operate in the bands 190-285 kHz; 325-435 kHz; 510-525 kHz; and 525-535 kHz. Radiobeacons may be authorized, primarily for off-shore use, in the band 525-535 kHz on a non-interference basis to travelers information stations.

* * * * *

(c) * * * * *

(2) The frequencies available for assignment to radionavigation land test stations for the testing of airborne receiving equipment are 108.000 and 108.050 MHz for VHF omni-range; 108.100 and 108.150 MHz for localizer; 334.550 and 334.700 MHz for glide slope; 978 and 979 MHz (X channel)/1104 MHz (Y channel) for DME; 1030 MHz for ATC radar beacon transponders; 1090 MHz for Traffic Alert and Collision Avoidance Systems (TCAS); and 5031.0 MHz for microwave landing systems. Additionally, the frequencies in paragraph (b) of this section may be assigned to radionaviagion land test stations after coordination with the FAA. The following conditions apply:

* * * * *

§ 87.479 Harmful interference to radionavigation land stations.

(a) Military or other Government stations have been authorized to establish wide-band systems using frequency- hopping spread spectrum techniques in the 960–1215 MHz band. Authorizations for a Joint Tactical Information Distribution Systems (JTIDS) and a Multifunctional Information Distribution System (MIDS) haves been permitted on the basis of noninterference to the established aeronautical radionavigation service in this band. In order to accommodate the requirements for the system within the band, restrictions are imposed. Included are that Ttransmissions will be automatically prevented if: (1) The frequency-hopping mode fails to distribute the JTIDS/MIDS spectrum uniformly across authorized frequencies in the band; (2) The radiated pulse varies from the specified width of 6.4 microseconds ±5%; (3) The energy radiated within ±7 MHz of 1030 and 1090 MHz exceeds a level of 60 dB below the peak of the JTIDS/MIDS spectrum as measured in a 300 kHz bandwidth. The JTIDS will be prohibited from transmitting if the time slot duty factor exceeds a 20 50 percent duty factor for any single user and a 40100 percent composite duty factor for all JTIDS/MIDS emitters in a geographic area. (b) If radionavigation systems operating in the 960–1215 MHz band experience interference or unexplained loss of equipment performance, the situation must be reported immediately to the nearest office of the A, e National Telecommunications and Information Administration, Washington, DC 20504, or the nearest Federal Communications Commission field office. The following information must be provided to the extent available: (1) Name, call sign and category of station experiencing the interference; (2) Date and time of occurrence; (3) Geographical location at time of occurrence; (4) Frequency nterfered with; (5) Nature of interference; and (6) Other particulars.

§ 87.529 Frequencies

Change first sentence to read: "Prior to submitting an application, each applicant must notify the applicable FAA Regional Frequency Management Office.